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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,938	11/21/2003	Shinichi Yoshimura	112857-443	3627
29175 7590 11/27/2007 BELL, BOYD & LLOYD, LLP P. O. BOX 1135 CHICAGO, IL 60690			EXAMINER BLOOM, NATHAN J	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/719,938	Applicant(s) YOSHIMURA ET AL.	
	Examiner Nathan Bloom	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 8 is rejected under 35 U.S.C. 101 because the language "A computer readable program recorded on a computer-readable recording medium" is not acceptable. The reason this language is unacceptable is because it appears to define a "program", wherein if it was written "A computer-readable recording medium encoded with a computer executable program" it would be clear that the claim language is defining a "product" that is the "computer-readable medium" and not the computer program. Thus in order to be consistent with office policy the claim language should clearly be directed to the computer readable medium embodying a program, and not a program that is stored on a computer readable medium.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Wallace (US 2003/0179083).

Instant claim 1: An image processing apparatus, comprising:

a reflector for reflecting emitted light changing with a predetermined pattern, wherein the predetermined pattern has an emitted cycle in which a portion of frames are captured; [*Wallace teaches an LED, or illuminator in Figures 1-4 (Item 40) and paragraphs 0025-0029, and in paragraph 0007 teaches the periodic (periodic is cyclical) illumination and imaging of the vehicle interior.*]

an image capturing device for capturing an image of the reflected light reflected by the reflector; [*Figures 1-5, 11, and paragraphs 0030-0033 wherein the vehicle interior is the reflective surface.*]

a difference calculator for calculating a difference, among $2N$ consecutive frames, between a sum in recent N frames and a sum in other N frames for each pixel of the image of the reflected light, captured by the image capturing device; [*Fig. 4-5, controller and memory perform "frame differencing" of 2 frames for each pixel forming a sample that is further compared to other samples, paragraphs 0034-0042. $N=1$ is a case that is taught by Wallace since Wallace teaches the differencing of a current and a previous frame. Furthermore, a sum of 1 frame is itself ($N=1$).*]

a comparator for comparing the difference calculated by the difference calculator, with a predetermined threshold; [*Wallace teaches the comparison and thresholding using the controller of Fig. 4. that is described in paragraphs 0043-0046.*]

a signal processor for outputting one of a first signal and a second signal depending on a result of the comparison performed by the comparator; [*Fig 4-5, signal processor and determination step*

are combined in description, if threshold is met then it is determined that the alarm is to be activated (affirmative signal is sent) due to presence of intruder, paragraphs 0049-0051]

a determination device for determining at a predetermined interval whether the signal output from the signal processor is a predetermined signal; and [See above. The controller of paragraphs 0043-0046 is also the determination device and in paragraphs 0049-0051 the determination as shown in Fig. 5 object number 102 "Do Pixel Values Indicate Intrusion?" the determination is made, this determination is part of a loop which happens at a known interval based on the chosen interval for the light pulsations of step 86 of Fig. 5]

a detector for detecting an invader or object according to a result of the determination performed by the determination device. [Detector or "alarm object" shown as item 104 of Fig.5 in Wallace is actuated based on the determination signal of object 102.]

Instant claim 7, describes the method accomplished by the apparatus of claim 1. As per rejection of instant claim 1 the apparatus that performs the method has been disclosed and thus the method has been disclosed.

Instant claim 8 describes the program that when implemented on a computer readable medium performs the differencing, comparison, signal processing, determining, and detection steps of the method of instant claim 1. Wallace discloses in paragraph 0034 that the controller is preferably a microcomputer programmed to perform the process of claim 5 including the "frame-differencing" algorithm. Thus Wallace has disclosed the implementation of the method as a program.

Instant claim 9 is encompassed by the limitations of instant claim 7 and hence is rejected by Wallace as per the rejection of instant claim 7.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace in view of Abe (US 6674893).

Instant claim 2 further limits the apparatus of claim 1 wherein the lighting apparatus is a floodlight. Wallace discloses an image processing apparatus of instant claim 1 wherein the lighting apparatus is a small laser beam or LED style light with low power consumption, because the particular application is for use in a low power system. Wallace does not teach the use of a floodlight to illuminate the area since this would require more power draw than desired.

However, Abe discloses an image processing apparatus the illuminates an area and measures the reflected light for further processing. Abe, in lines 15-24 column 1 discloses the use of a spot-light or other projection light for projecting the light into the desired area, and in lines 8-14 of column 1 teaches the use of a projection light to measure luminance. It would have been obvious to one of ordinary skill in the art to combine Wallace with Abe to provide a desired amount of light for use in measuring the luminance of an object as is done in the alarm system described by Wallace.

Allowable Subject Matter

1. Claim 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The requirement of instant claim 3 that $N=2$ is not taught by Wallace as Wallace only teaches the case where $N=1$ and does not include the summation of multiple consecutive frames. However, Otsuki (US 5877804) teaches the summation of multiple reference frames and the difference of these multiple frames from a single current frames, but does not teach the summation of the current and recent frames nor does Otsuki teach the summation the use of $2N$ consecutive frames. Also, claims 4-6 depend from claim 3, and thus are also objected to as being dependent upon a base claim.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Bloom whose telephone number is 571-272-9321. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed, can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB

A handwritten signature in black ink, appearing to read 'Samir', followed by a large, horizontal oval flourish.

SAMIR AHMED
SUPERVISORY PATENT EXAMINER